Miami Dade County

Transportation Management Center (TMC)

Functionality Study

TPC Meeting

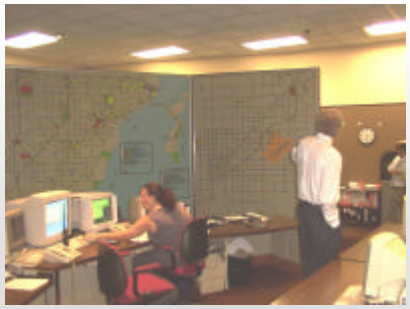
January 14, 2002

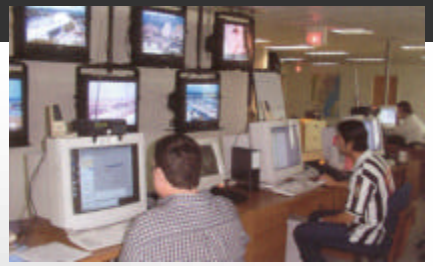
Project Purpose

- Inventory Existing Centers
- Study TMC Functionalities
- Case Studies – Lessons Learned
- Investigate Co-location Opportunities
- Recommend Future Actions

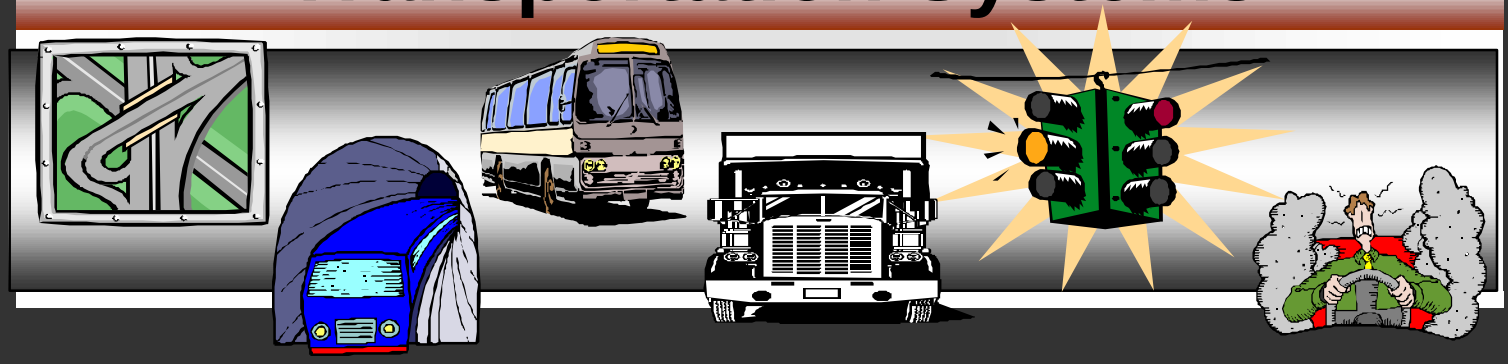
A TMC is a central facility for …

- Monitoring
- Controlling
- Managing





Transportation Systems



A TMC performs by…

Integration of …

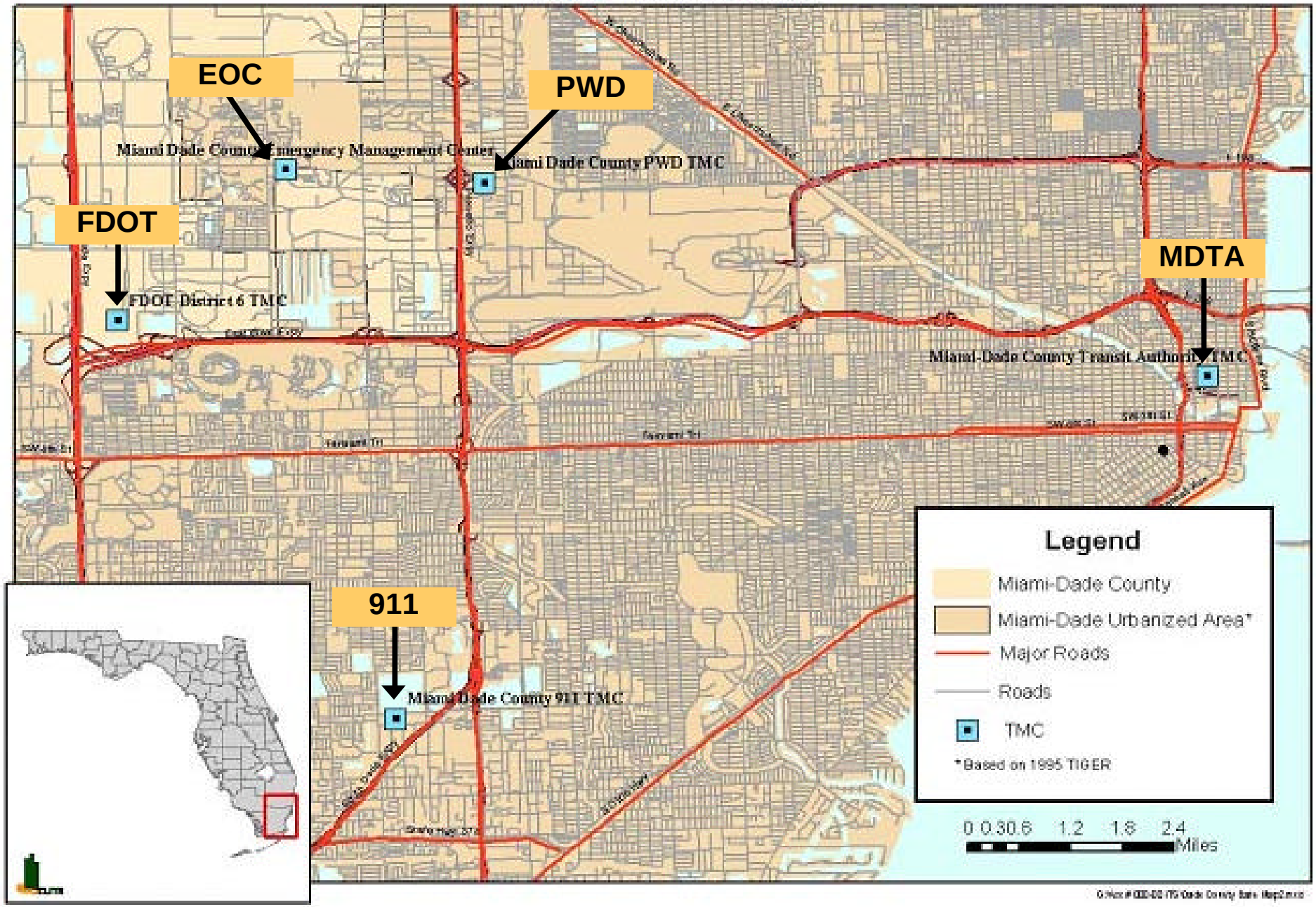
- **Software**
- **Central Hardware**
- **Field equipment**

into a complete Unified System

Miami-Dade County – Existing Centers for Transportation

- **Agency Specific**
  - FDOT District 6 TMC
  - County Traffic Control Center
  - County Emergency Operations
  - Miami-Dade Transit
  - County Police – 911 Center
- **Information Service Provider (ISP)**
  - SmartTraveler

Transportation Management Centers
Miami-Dade County



Miami-Dade County – Existing Centers for Transportation

- **FDOT District 6 TMC**
  - 24 hrs/day, Monday through Friday; FHP handles service patrol on weekends
  - 8 employees, plus students from FIU
  - Coverage includes I-95 and US 1 Corridor
  - Connected to FHP dispatch in real time
  - Field devices: 27 CCTV, 4 VMS, 16 detector stations, 25 AVI equipped Road Ranger vehicles; additional devices planned
  - New $6m (32,000 SF) TMC building by Mid-2002; FDOT/FHP co-location planned

Miami-Dade County – Existing Centers for Transportation

- **Miami-Dade PW Traffic Control Center**
  - 17 hrs/day, 7 days/week; 5000 SF
  - 13 employees at center
  - Field device: 2020 signals
  - No automated information gathering or sharing
  - Telephone contact with FDOT; Fiber or leased line connection w/FDOT planned
  - Plans to expand in 3 years

Miami-Dade County – Existing Centers for Transportation

- **Emergency Operations Center (EOC)**
  - 7 am to 5 pm M-F, 24/7 in emergencies
  - 22,000 SF; 17 employees
  - Located in the Fire and Rescue Headquarters
  - Maintain emergency preparedness: evacuation, safety, sheltering
  - Monitor (automated) Turkey Point Nuclear Power Plant
  - Information dissemination via blast faxing (thru e-mail)
  - Like to receive FDOT Videos

Miami-Dade County – Existing Centers for Transportation

- **Miami-Dade Transit Agency (MDTA)**
  - Central Control Center: 24/7, 365 days a year
  - Operates MetroRail, Metro Bus, MetroMover, and Special Transportation Services (STS)
  - CAD/AVL for buses
  - Operates customer information center for traveler information
    - Menu driven telephone information
  - Plans are underway for providing dynamic schedule information to public

Miami-Dade County – Existing Centers for Transportation

- **County Police and 911 Center**
  - 24 hours/7days
  - CAD system upgrade is planned
  - County 911 responds to calls to Police and Fire departments
  - Currently no video sharing with FDOT
  - Contact with transportation via telephone
  - participates in the Critical Incident Management committee with FDOT and FHP

Miami-Dade County – Existing Centers for Transportation

- **Findings**
  - Very little sharing of information (data, video) in real-time
  - No formal plan among TMCs to implement compatible systems
  - TMCs are interested in sharing videos
  - TMCs want to doing and providing more

TMCs Nationwide – Increasing Trend of…

- **Regionwide Systems Integration**
- **Multi-agency Operations Co-location**
  - Houston TranStar TMC
  - Atlanta NaviGAtor TMC
  - New York City Joint TMC
  - Many Others
- **Multi-agency Coordination**
  - Face to Face
  - Electronic

Example – Houston TranStar TMC

- **Houston Metro Area**
  - Multi-agency Co-location
    - Texas DOT (Freeways)
    - Harris County (Arterials)
    - Houston Metro (Transit Dispatch)
    - City of Houston (Local Streets)
    - Law Enforcement (Incident Management)
    - Media Booth On-site
  - Multi-agency Coordination
    - In One Large Room

Example – New York City Joint TMC

- **New York City Area**
  - Multi-agency Co-location
    - New York State DOT (Freeways)
    - New City DOT (City Arterials and Streets)
    - New York City Police
  - Multi-agency Coordination
    - In Adjacent Rooms
    - Electronic Via TRANSCOM Regional Architecture

TMCs Nationwide – Lessons Learned…

- **Increasing Benefits from Systemwide Integration**
- **Multi-agency Co-location Works**
- **Multi-agency Co-location has Challenges**
  - Institutional Challenges – Most Critical
  - Technological Challenges – Less Critical
- **Need a Regional TMC Concept of Operations**

Conclusions

- On-site physical presence Freeway Management and Law Enforcement is beneficial
- On-site physical presence of Freeway Management and Arterial Management should not be ruled out
- On-site physical presence of Emergency Management is beneficial but not necessary

Conclusions

- On-site physical presence of Transit Dispatch in a regional TMC may be desirable but not necessary
- On-site physical presence of Media is Beneficial
- Consider developing a regional electronic information exchange network.

Conclusions

- **Develop a Regional TMC Concept of Operations**
  - Key Elements
    - Systems
    - Participating Agency Responsibilities
    - Operational Facility Needs
    - Integration and Testing
    - Operations and Maintenance
    - Procurement
    - Training and Documentation
  - This TMC Study is a First Step